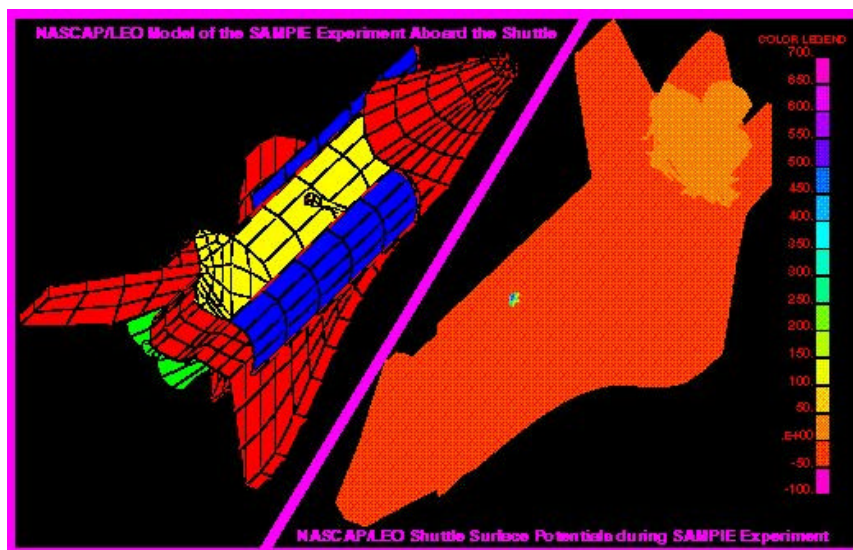




Interactive Spacecraft Charging Handbook with Integrated, Updated Spacecraft Charging Models

E11



Objective

Recent spacecraft failures have brought into focus the need for increased understanding and modeling of spacecraft charging by spacecraft designers. Spacecraft charging assessments are needed for designing all geosynchronous, mid-altitude, and polar, low-Earth orbit spacecraft. The standard spacecraft charging code, NASCAP, is a complex tool to use, does not address buried charge buildup, and is limited in respect to the geometry it can model. Recent advances in computer hardware and software tools have made the development of an interactive spacecraft charging handbook possible for a reasonable cost. This interactive handbook will be easy to use and will guide the non-expert through the appropriate analysis using the power of sophisticated charging analysis tools. Six assessment modeling tools will be developed and integrated over the next 3 years with each year's products available for immediate use by spacecraft designers and manufactures. The handbook will include and extend the existing NASA guidelines and Air Force handbook and will be available over the web via the SEE Programs' internet web site.

Why Needed

In order for "faster, cheaper, better" to become a reality, the advances in interactive communications using personal computers must be applied to spacecraft design technology. NASA, the Air Force, and commercial satellite designers need the information on how to build satellites using advanced technologies that can survive the natural space environment.

Point of Contact

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Sponsor

NASA Space Environments and Effects (SEE) Program